

NORTH AMERICAN BEES OF THE GENERA *ANDRENA* AND
MELITTA IN THE BRITISH MUSEUM.

BY T. D. A. COCKERELL, BOULDER, COLORADO.

Andrena aliena, Smith.

St. John's Bluff. Mr. Viereck sent a species of the *Trachandrena* group from Georgia, which was taken for *aliena*, but the true *aliena* is quite different and apparently should be referred to the *Palandrena* group. Its distinctive characters, in comparison with the Georgia species, are as follows:

Larger; fimbria lighter and redder; hair-bands very distinct on segments 2 to 4, but broadly interrupted on 2; hind margins of abdominal segments strongly yellowish; punctures of abdomen much less strong and distinct, especially on first segment; area of metathorax triangular, delicately *transversely* striate, not at all longitudinally ridged, not bounded by an elevated rim; wings practically clear; tegulae small, dark reddish, convex, extremely shiny; mesothorax shining; tibiae and tarsi dark, nowhere strongly reddened; facial foveae practically obsolete (a short area without punctures or pubescence adjacent to upper part of eye); hair at sides of face very white; a strong raised line from middle ocellus to level of antennae antennal joint 3 about as long as 4+5; eyes converging below; stigma narrow, dark reddish, the parts before and behind the marginal nervure about equal; first recurrent nervure joining second submarginal cell at or almost at its middle; marginal cell narrow, its tip distinctly away from costa; outer scopa of hind tibiae very long, somewhat dusky, especially towards base, and very strongly plumose. Altogether, this is a remarkable species.

Andrena frigida, Smith

Mr. Viereck sent for comparison a presumed *frigida* from Seattle, Wash. Comparison with the type showed that they had the same general appearance, pubescence, etc. but although very closely allied, they are not the same species. The type *frigida* differed as follows: stigma lighter and yellower; second submarginal cell larger, and basal nervure meeting transverse-medial; abdomen broader; hind margins of abdominal segments dark reddish; third antennal joint longer than 4+5; facial fovea broad, dark purple-brown (black in Seattle insect); lateral hairs of face, overlapping fovea, black; process of labrum all shiny, narrowly submarginately truncate, with sloping sides (in the Seattle insect with a dull apical protuberant area.)

Andrena moesta, Smith

A Corvallis, Oregon, specimen regarded as *moesta* was sent by Mr. Viereck. Compared with the type, I found the following resemblances and differences: type has outer margin of third submarginal cell much more curved, and a light amber stigma (stigma is dark brown in the Corvallis species): both have the same black facial fovea, the same pubescence, etc., and the abdomen is the same in both; type has fourth and base of fifth antennal joints reddish beneath, but this is not very conspicuous; tegulae of type are distinctly reddish behind.

The male type of *moesta* has long and falcate mandibles, without any tooth beneath or at base; cheeks produced to an angle behind.

The Corvallis insect probably should stand as a subspecies. It is recorded by Viereck in *Canad. Entom.* 1904, p. 224.

Andrena (Trachandrena) miranda, Smith

The type, compared with a supposed *miranda* sent by Mr. Viereck, differed thus:—Ridges of metathoracic enclosure stronger, the surface more shining between; scutellum more densely (though irregularly) punctured, and the punctures larger: when the thorax is viewed from above, the hair of tubercles, etc. in front of the wings, is seen to be strongly yellowish; facial foveae inclining to yellowish grey; an extremely narrow line between facial foveae and eye (a narrow but much broader area in the supposed *miranda*); punctures of clypeus apparently rather larger; third submarginal cell much more narrowed above, narrower above than second. The type has the tibiae and tarsi dark red; it has *not* the margins of the abdominal segments testaceous, or it would seem to run to *claytoniae* in Robertson's tables.

Smith's male *miranda* appears to run in Robertson's tables to *mariae*, or it might be held to run to *claytoniae*. The abdomen is more or less reddish-brown. By the lighter stigma, much less strongly punctured abdomen, etc. it appears not to belong to the same species as the ♀ type.

Andrena fastuosa, Smith

♀ The type is very like *A. argemonis*, Ckll.; it differs by having more black on abdomen, only the second segment being entirely red, or more red than black. The process of labrum is narrower; apex of wings not so dark; first abdominal segment broader. *A. argemonis* is an idiomorph of *fastuosa*.

Andrena errans, Smith

♀ Vancouver I. (*Lyall*). The type looks like *A. vicina* and *cartini*. Hair of

face, cheeks, and pleura black : although the wings are quite dark, the stigma is dull amber ; clypeus has very close, large punctures, and a well-defined longitudinal ridge ; hair of metathorax black, and its enclosure is larger than in *vicina*, its apical angle noticeably larger ; it is minutely roughened, with delicate raised wrinkles basally ; process of labrum similar to that of *vicina*, but with the truncation not so broad ; hair of occiput dark, but there is a tuft of light fulvous hair directed forwards over the ocelli : discs of abdominal segments beyond the first with rather abundant short erect black hair. Perhaps *A. pluvialis*, Ckll., should not be separated specifically from this. The British Museum series consists of six specimens, not all of one species, but the above remarks are based on the one bearing the type label.

Andrena obscuripennis, Smith

♀ A very fine species with extremely dark wings, which expand 30mm. Abdomen with strong punctures : stigma small : tibial scopa dense ; area of metathorax pointed behind, not truncate, raised margin slight : anterior middle of clypeus dark red.

Andrena clypeata, Smith

Differs from *A. bipunctata* by being a little smaller (expanse of wings 12mm.) abdomen dark brown. Flagellum dark as in *bipunctata* ; third antennal joint longer than 4, but not nearly as long as 4+5 ; clypeus yellow with two black spots. Runs to *bipunctata* in Robertson's tables, except that the abdomen is not strictly black. It seems conspecific with *bipunctata*, or perhaps a Floridian race.

Andrena victima, Smith.

♀ The type is stylized. Fimbria dark brown, a sort of purplish sooty : abdomen not fasciate, sericeous, with only small piliferous punctures ; hair of scutellum quite bright orange-fulvous, all the thoracic hair being of this color, though not everywhere so bright ; tibial scopa pale orange-fulvous.

The male (type of *A. desponsa*) is also stylized. In Robertson's tables it seems to run closest to *sayi*. The area of metathorax has some little straight basal ridges, as though puckered. Second submarginal cell large, with recurrent nervure joining it at the middle. Cheeks ordinary.

Andrena hirticeps, Smith

♂ type. Cheeks very broad, angled behind, the angle somewhat above level of middle of eye ; mandibles simple at base : hair of clypeus long, white ; of sides of face black ; third antennal joint about as long as 4+5 : nervures and

stigma rather light red; abdomen sericeous, with no true punctures; four narrow white hair-bands on *ventral* surface of abdomen. Not in Robertson's tables. The apical ventral valve is broad and emarginate, that is to say, obcordate

Andrena agilis, Smith (Mexico)

♂ type. Hair on sides of face long and black; black hair at junction of cheeks and occiput; large yellow mark on clypeus, rounded above and below, and notched at the sides, with the form of a young agaric with a very thick stipe; wings seem unusually large; basal nervure falling short of transverse-medial by a moderate distance; second submarginal cell at least as broad above as below; third submarginal very broad above; base of abdomen slender.

Andrena simulata, Smith (Mexico)

Hair of thorax quite lively fulvous or tawny; in type specimen the middle of thorax is bare, the hair having apparently been rubbed off. Facial foveae deep, pubescent, brown seen from above, having the form of a somewhat oblique band of no great breadth, its upper end close to the outer ocellus, its lower close to the eye, at about the level of the antennae; thorax and abdomen shining, abdomen broad; tegulae clear amber; first recurrent nervure joining second submarginal cell far beyond its middle.

Andrena (Pterandrena) discreta, Smith. (Mexico).

Very peculiar for having the abdomen except first segment red (clouded with black), densely covered with short orange hair; fimbria orange; first joint of hind tarsus broad, red; first recurrent nervure joining second submarginal cell *before* its middle; stigma small; facial foveae rather broad, not distinctly separated from eye; first joint of labial palpi curved; about as long as the other three together; hair of thorax fulvo-ferruginous; tegulae amber; tibial scopae dense, plumose.

Andrena modesta, Smith (Mexico)

♀ *Marginal cell squarely* (or rather slightly obliquely) *truncate*; *basal nervure falling far short of transverse-medial*: first recurrent nervure joining second submarginal cell conspicuously beyond its middle; *face black*, very little hairy; facial quadrangle broader than long; *tongue short* (i. e. not as in the Panurgids), maxillary palpi 6-jointed; facial foveae deeply impressed *but not pubescent*, in form small, short and narrow, close to upper part of eye; *area of metathorax not distinct*; abdomen very shiny, yellowish-red, blackened at base and apex. This

is not an *Andrena*, it must stand for the present as *Protandrena modesta*, but it is at least the type of a new subgenus of *Protandrena*, which may be called *Austrandrena*. Its principal characters are italicized above.